

Serial No. 10/695,592
Attorney Docket No. 87159200.242001

Amendments to the Claims

1. (Withdrawn) A programmable current controller comprising:
a programmable interface configured to program a digital reference in a memory,
wherein the digital reference corresponds to a predetermined driving current
for at least one illumination source;
a digital-to-analog converter coupled to the programmable interface and configured to
convert the digital reference into a first electrical parameter;
a comparator coupled to the programmable interface and configured to
compare the first electrical parameter with a second electrical parameter
corresponding to an operating driving current of the at least one
illumination source, and
generate a driving bias current; and
a current regulator coupled to the comparator and configured to
regulate the operating driving current of the at least one illumination source
according to the driving bias current, wherein the driving bias current
corresponds to a difference between the first and second electrical
parameters.
2. (Withdrawn) A programmable current controller according to claim 1, wherein
the comparator is a voltage comparator;
the first electrical parameter is a voltage corresponding to the predetermined driving
current for the at least one illumination source; and
the second electrical parameter is a feedback voltage corresponding to the operating
driving current of the at least one illumination source.
3. (Withdrawn) A programmable current controller according to claim 1, wherein
the comparator is a current detector;
the first electrical parameter is a current corresponding to the predetermined driving
current for the at least one illumination source; and

Serial No. 10/695,592

Attorney Docket No. 87159200.242001

the second electrical parameter is a feedback current corresponding to the operating driving current of the at least one illumination source.

4. (Withdrawn) A programmable current controller according to claim 1, further comprising:

a sensor coupled to the at least one illumination source and configured to measure the second electrical parameter.

5. (Withdrawn) A programmable current controller according to claim 5, wherein the sensor is a resistor.

6. (Withdrawn) A programmable current controller according to claim 1, wherein the programmable interface is an inter-integrated circuit serial interface.

7. (Withdrawn) A programmable current controller according to claim 1, wherein the programmable interface is a three-wire serial interface.

8. (Withdrawn) A programmable current controller according to claim 1, wherein the current regulator further comprises

a metal-oxide semiconductor transistor, wherein

a gate terminal of the metal-oxide-semiconductor transistor receives the driving bias current,

a drain terminal of the metal-oxide-semiconductor transistor is coupled to a power supply, and

a source terminal of the metal-oxide-semiconductor transistor is grounded.

9. (Withdrawn) A programmable current controller according to claim 1, wherein the at least one illumination source comprises at least one light-emitting diode.

10. (Currently Amended) A display system comprising:

a display panel having at least one illumination source; and

a programmable current controller coupled to the at least one illumination source, wherein the programmable current controller is configured to regulate an

Serial No. 10/695,592

Attorney Docket No. 87159200.242001

operating driving current of the at least one illumination source according to a digital reference programmable by a user and corresponding to a predetermined reference driving current.

11. (Original) A display system according to claim 10, wherein the display panel is a liquid crystal display panel.

12. (Original) A display system according to claim 10, wherein the programmable current controller comprises:

a programmable interface configured to program the digital reference in a memory;
a digital-to-analog converter coupled to the programmable interface and configured to convert the digital reference into a first electrical parameter;
a comparator coupled to the programmable interface and configured to compare the first electrical parameter with a second electrical parameter corresponding to the operating driving current of the at least one illumination source, and
generate a driving bias current; and
a current regulator coupled to the comparator and configured to regulate the operating driving current of the at least one illumination source according to the driving bias current, wherein the driving bias current corresponds to a difference between the first and second electrical parameters.

13. (Original) A display system according to claim 12, wherein the programmable current controller further comprising:

a sensor coupled to the at least one illumination source and configured to measure the second electrical parameter.

14. (Currently Amended) A ~~programmable current controller~~ display system according to claim 12, wherein the sensor is a resistor.

Serial No. 10/695,592

Attorney Docket No. 87159200.242001

15. (Currently Amended) A method of regulating an operating driving current for at least one illumination source of a display system comprising:

measuring a first electrical parameter corresponding to the operating driving current of the at least one illumination source;

converting a digital reference into a second electrical parameter, wherein the digital reference is programmable by a user and corresponds to a predetermined driving current for the at least one illumination source;

comparing the first electrical parameter with the second electrical parameter;

based on the comparison, generating a driving bias current; and

regulating the operating driving current of the at least one illumination source according to the driving bias current.

16. (Original) A method according to claim 15, wherein

the first electrical parameter is a feedback voltage corresponding to the operating driving current of the at least one illumination source; and

the second electrical parameter is a voltage corresponding to the predetermined driving current for the at least one illumination source.

17. (Original) A method according to claim 15, wherein

the first electrical parameter is a feedback current corresponding to the operating driving current of the at least one illumination source; and

the second electrical parameter is a current corresponding to the predetermined driving current for the at least one illumination source.

18. (Original) A method according to claim 15, wherein the digital reference is stored in a memory.

19. (Original) A method according to claim 15, wherein the driving bias current corresponds to a difference between the first and second electrical parameters.

20. (Original) A method according to claim 15, wherein the display system is a liquid crystal display system.

Serial No. 10/695,592

Attorney Docket No. 87159200.242001

21. (Original) A method according to claim 15, wherein the at least one illumination source includes at least one light-emitting diode.

22. (New) A display system according to claim 12, wherein the programmable interface is an inter-integrated circuit serial interface.

23. (New) A display system according to claim 12, wherein the programmable interface is three-wire serial interface.

24. (New) A display system comprising:
a display panel having at least one illumination source;
a programmable interface configured to store a digital reference programmable by a user;
a digital-to-analog converter configured to convert the digital reference into a first electrical parameter;
a comparator configured to
compare the first electrical parameter with a second electrical parameter
corresponding to an operating driving current of the at least one illumination source, and
generate a driving bias current; and
a current regulator configured to regulate the operating driving current of the at least one illumination source according to the driving bias current, wherein the driving bias current corresponds to a difference between the first and second electrical parameters.

25. (New) A display system according to claim 24, wherein the second electrical parameter is obtained by measurement of the operating driving current flowing through the illumination source.

26. (New) A display system according to claim 24, wherein the programmable interface is an inter-integrated circuit serial interface.

Serial No. 10/695,592

Attorney Docket No. 87159200.242001

27. (New) A display system according to claim 24, wherein the programmable interface is three-wire serial interface.